BERLYAND, M.Ye.; GENIKHOVICH, Ye.L.; LOZHKINA, V.P.; ONIKUL, R.I.

Numerical study of atmospheric diffusion under normal and anomalous conditions of stratification. Trudy GGO no.158:22-31 '64.

Characteristics of the diffusion of heavy pollutants in the atmosphere. Ibid.:32-40 (MIRA 17:9)

CHISTYAKOV, A.D.; BURKOVA, M.V.; ORLOVA, Ye.M.; GLAZOVA, O.P.; PED', D.A.; BERLYAND, M.Ye.; ABRAMOVICH, K.G.; POPOVA, T.P.; MATVEYEV, L.T.; BACHURINA, A.A.; LEBEDEVA, N.V.; PESKOV, B.Ye.; ROMANOV, N.N.; VOLEVAKHA, N.M.; PCHELKO, I.G.; PETRENKO, N.V.; KOSHELENKO, I.V.; PINUS, N.Z.; SHMETER, S.M.; MATVEYEVA, T.F.; MININA, L.S.; BEL'SKAYA, N.N., nauchn. red.; ZVEREVA, N.I., nauchn. red.; KURGANSKAYA, V.M., nauchn. red.; MERTSALOVA, A.N., nauchn. red.; TOMASHEVICH, L.V., nauchn. red.; SAGATOVSKIY, N.V., otv. red.; KOTIKOVSKAYA, A.B., red.

[Manual of short-range weather forecasting] Rukovodstvo po kratkosrochnym prognozam pogody. Leningrad, Gidrometeoizdat. Pt.2. Izd.2. 1965. 491 p. (MIRA 18:8)

1. Moscow. TSentral'nyy institut prognozov.

L 60503-65 EWT(1) P2 GW

TOPIC TAGS: atmospheric diffusion, atmospheric contamination, air pollution

L 62503-65
ACCESSION NR: AT5019132

and the exchange coefficient exert an appreciable influence on the atmospheric

L 62503-65

ACCESSION NR: AT5019732

NO REF SOV: 019 OTHER: 002

Card 3/3

L 2669-66 EWT(l)/EWT(m)/FCC/EWA(h) GS/GW

ACCESSION NR: AT5023953 UR/0000/65/000/000/0380/0391

AUTHOR: Berlyand, M. Ye.; Genikhovich, Ye. L.; Dem'yanovich, V. K.; Onikul, R. I.

TITLE: Effect of vertical distribution of temperature and wind velocity on the atmospheric diffusion of radioactive pollutants

SOURCE: Nauchnaya konferentsiya po yadernoy meteorologii. Obninsk, 1964. Radioaktivnyye izotopy v atmosfere i ikh ispol'zovaniye v meteorologii (Radioactive isotopes in the atmosphere and their use in meteorology); doklady konferentsii. Moscow, Atomizdat, 1965, 380-391

TOPIC TAGS: nuclear meteorology, air pollution, atmospheric surface boundary layer, atmospheric boundary layer, micrometeorology, radioactive fallout, radioactive pollution, lapse rate, atmospheric turbulence, wind velocity

ABSTRACT: Until recently, Soviet research dealing with problems of atmospheric pollution from continuously active point sources has been based on models of conditions for wind velocity and the coefficient of turbulent exchange prevailing in the surface boundary layer of the atmosphere. The present paper discusses the inapplicability of this

Card 1/2

L 2669-66
ACCESSION NR: AT5023953

model to many existing and planned point sources and to problems of radioactive fallout; it presents a quantitative analysis of the effects of lapse rates, wind velocity, turbulent exchange, and other factors and a mathematical model which reflects them as they actually occur in the thicker boundary layer. Orig. art. has: 8 formulas and 5 figures. [ER]

ASSOCIATION: none

SUBMITTED: 28Apr65 ENCL: 00 SUB CODE: ES, NP

NO REF SOV: 009 OTHER: 000 ATD PRESS: 4101

Card 2/2

BERLYAND, M.Ye.; GENIKHOVICH, Ye.L.; DEM'YANOVICH, V.K.

Some actual problems of studying atmospheric diffusion. Trudy GGO no.172:3-22 '65. (MIRA 18:8)

ACC NR: AT6035508 SOURCE CODE: UR/2531/66/000/185/0015/0025

AUTHOR: Berlyand, M. Ye. (Doctor of physico-mathematical sciences)

ORG: none

TITLE: Conditions contributing to the danger of atmospheric pollution by industrial effluents

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 185, 1966. Voprosy atmosfernoy diffuzii i zagryazneniya vozdukha (Problems of atmospheric diffusion and air pollution), 15-25

TOPIC TAGS: micrometeorology, atmospheric diffusion, air pollution, [redacted], temperature inversion, wind field, [redacted], smog, atmospheric turbulence, wind velocity, atmospheric

ABSTRACT: Previous studies by the author have presented mathematical approaches to the investigation of various meteorological factors which contribute to hazardous air pollution conditions in industrial areas (Trudy Glav. Geofiz. Observ., no. 158, 1964; no. 172, 1965; Meteorologiya i geofizika, no. 8, 1963). These studies included the effects of turbu-

Card 1/2 UDC: none

ACC NR: AT6035508

lent diffusion of pollutants from point sources (permitting the calculation of variations in the exchange coefficient with height) and the relationship of lifting inversions to anomalous stratification conditions. The present paper presents simplified mathematical formulas for representing the combined effects of lapse rate distribution (especially during lifting inversions) and wind speeds, emphasizing turbulent intensity and the turbulent exchange coefficient. Particular cases illustrated include the distribution of pollutants from hot jets of air (from thermoelectric power station stacks) and relatively cool jets (from chemical plant stacks) discharged into atmospheres of various states of stability. Wind speeds of about 5 m/sec are identified as tending to produce hazardous pollution from thermal power plant stacks, and of 1—2 m/sec for chemical plant stacks. These findings are correlated with results from studies of the effects of smokestack heights, temperature inversions, and atmospheric stratification. Orig. art. has: 35 formulas.

[WA-50; CBE No. 14]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 006 [ER]

Card 2/2

ACC NR: AT6035507 SOURCE CODE: UR/2531/66/000/185/0003/0014

AUTHOR: Beriyand, M. Ye. (Doctor of physico-mathematical sciences); Genikhovich, Ye. L.; Maslova, G. Ye.

ORG: none

TITLE: Theory of the relationship of atmospheric aerosol concentrations to their flow on horizontal plates

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 185, 1966. Voprosy atmosfernoy diffuzii i zagryazneniya vozdukha (Problems of atmospheric diffusion and air pollution), 3-14

TOPIC TAGS: micrometeorology, ~~atmospheric~~ air pollution, atmospheric diffusion, aerosol, ~~aerosol sampling~~, ~~sampling plate~~, meteorological computer, special purpose computer, computer calculation, gas flow

ABSTRACT: Results are presented of studies of the theory defining the settling of aerosols from the atmosphere onto horizontal collecting plates, the relationship between the amounts of pollutants collected on the plates and the actual pollutant concentration at the level of plate installations, the effects of plate dimensions and meteorological factors, etc. These plates usually have dimensions of several

Card 1/3 UDC: none

ACC NR: AT6035507

tenths of a meter, are installed one to several meters above the ground surface, are coated with an adhesive, and are assumed to be absolutely absorbent. During an inflow of air, the aerosol particle distribution is disrupted, resulting in differences in pollutant concentrations on the plates and in the surrounding medium. Equations are derived to express the process of turbulent diffusion of aerosols above a plate; the fields of motion velocity and the exchange coefficients are taken into account.

The parabolic equation of turbulent diffusion of the aerosol was converted to a difference equation and solved numerically on a Ural-4 computer. This computer permitted storage of up to 400 points along x in a single layer, i.e., up to 400 values of the solution could be stored for fixed x. The computations were carried out for different values of the input quantities V (wind speed of inflowing air), K (the turbulence coefficient in the inflowing air), w_0 (the gravitational rate of aerosol settling), and L (plate length). The results indicated that turbulent aerosol flows have comparatively little dependence on changes in w_0 in the 0—0.1 m/sec range.

Card 2/3

ACC NR: AT6035507

The formulas derived permit estimation of the dependence of a vertical aerosol flow on plate dimensions and meteorological conditions, as characterized by values of the wind velocity and the exchange coefficient at the level of the plate. The dependence of the ratio of vertical aerosol flows to their concentrations at the height at which the plate is installed was established. The values obtained here are considerably lower than those of the simplest case, in which the flow around the plate is not considered, the horizontal component of the wind velocity u and the exchange coefficient k are not height dependent, and the vertical component w coincides with the gravitational rate of aerosol settling. Orig. art. has: 3 figures and 27 formulas.

[WA-50; CBE No. 14]
[EO]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 008/ OTH REF: 001

Card 3/3

BERLYAND, N.G.; NIKOL'SKIY, Yu.I.

Evaluation of the methods of quantitative interpretation of gravitational anomalies above a vertical shelf. Izv. AN Turk. SSR.Ser. fiz.-tekh., khim. i geol. nauk no.4:57-65 '63. (MIRA 17:2)

1. Otdel razvedochnoy geofiziki i seysmologii AN Turkmenskoy SSR.

YANOVSKAYA, B.I.; BERLYAND, N.S.; RESHETOVA, M.N.; SOKHINA, A.M.

Effect of biomycin on vitamin C metabolism in experimental animals and human subjects. Vop.med.khim. 6 no.4:345-350 Jl-Ag '60. (MIRA 14:3)

1. Research Team under the direction of prof. B.A.Lavrov, Chair of Therapeutics, Central Institute for Postgraduate Medical Training, Moscow.

(ASCORBIC ACID) (AUREOMYCIN)

BERLYAND, N.S.; RESHETOVA, M.N.

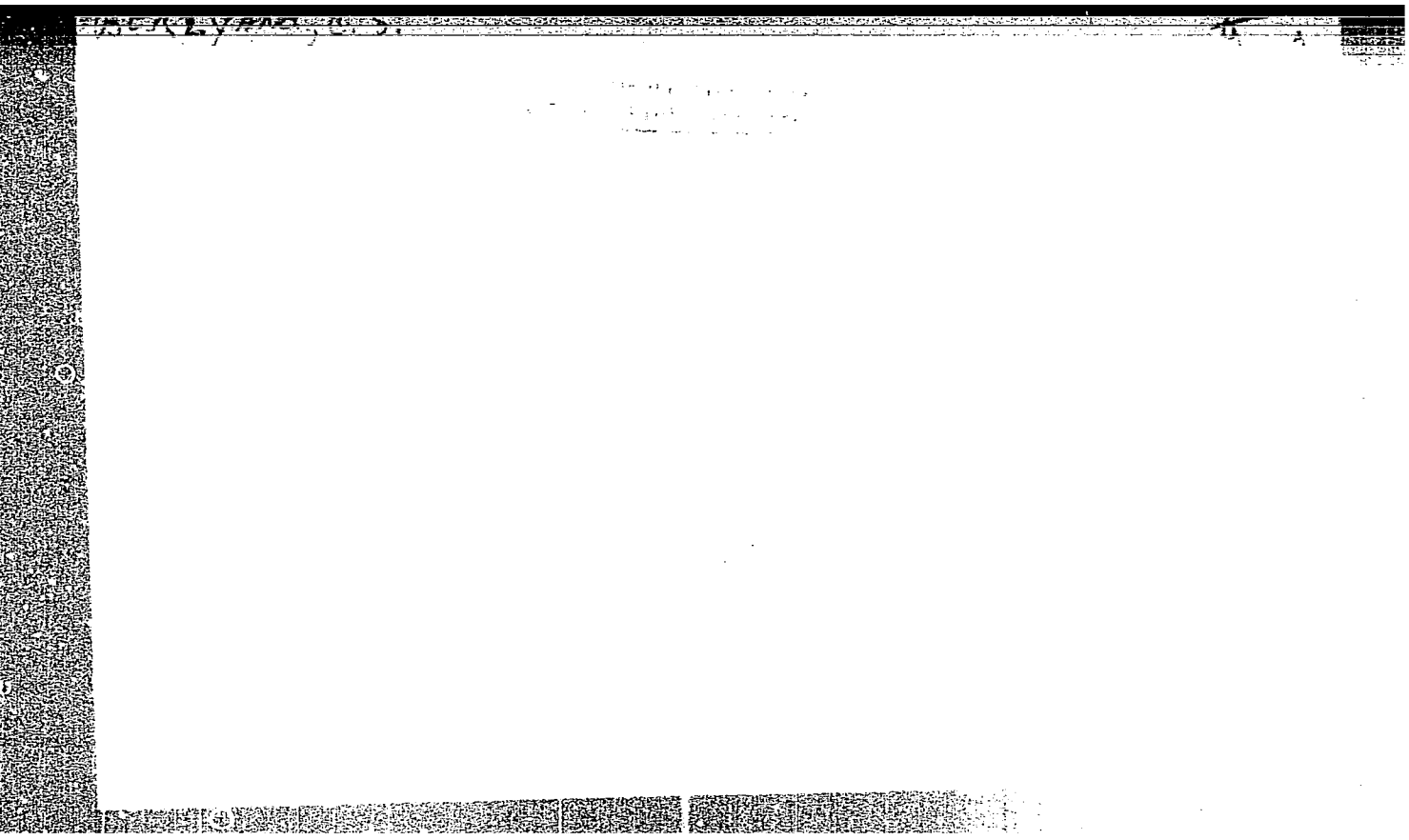
Quantitative and structural changes in blood proteins in rheumatic defects of the heart. Nauch. rab. asp. i klin. ord. no.6:4-8 '60. (MIRA 14:12)

1. I kafedra terapii (zav. deystvitel'nyy chlen AMN SSSR, prof. M.S.Vovsi)TSentral'nogo instituta usovershenstvovaniya vrachey.
(BLOOD PROTEINS) (RHEUMATIC HEART DISEASE)

HERLYAND, N.S., kand. med. nauk

Activity of aminopherase (transaminase) in rheumatic carditis.
Vop. revm. 2 no.2:41-45 Ap-Je'62 (MIRA 17:3)

1. Iz kafedry 1-y terapii (zav. - deystvitel'nyy chlen AMN SSSR prof. M.S. Vovsi [deceased]) TSentral'nogo instituta usovershenstvovaniya vrachey, Moskva.



APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010009-4"

BERLYAND, O. S.

PA156T73

USSR/Meteorology - Atmosphere, Temperature Conductivity, Thermal — Jan/Feb 50

"More Accurate Theory of the Diurnal Behavior of Air Temperature, Taking Into Account the Change in the Coefficient of Turbulent Heat Conductivity in 24 Hours," O. S. Berlyand, Geophys Inst, Acad Sci USSR, 12 pp

"Iz Ak Nauk SSSR, Ser Geograf i Geofiz" Vol XIV, No 1

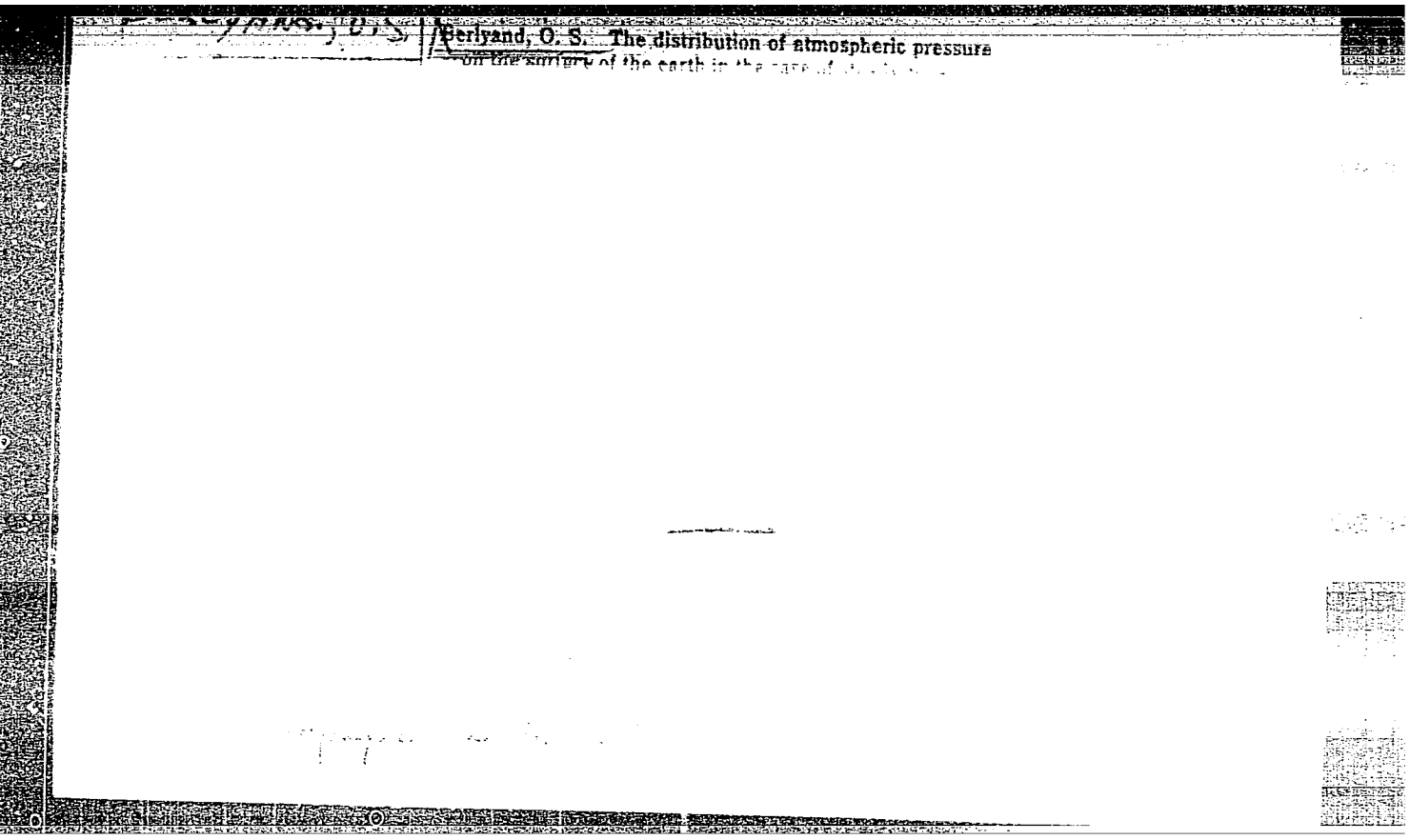
Shvets previously calculated diurnal behavior of air temperature, assuming the coefficient of

[redacted] 156T73

USSR/Meteorology - Atmosphere, Temperature (Contd) — Jan/Feb 50

turbulent heat conductivity depended only on height. Diurnal temperature curves calculated by this method differed by 1-2° C from observed curves. Berlyand calculated diurnal behavior of temperature, assuming the coefficient of turbulent heat conductivity depended on height and time of day. Submitted by Acad O. Yu. Shmidt 21 Jul 49.

[redacted] 156T73



USSR/Engineering - Hydrodynamics Jan 51

"On the Coefficient of Hydraulic Resistance During Turbulent Flow of Liquid in Smooth Pipes," O. S. Berlyand, Cand Tech Sci

"Gidrotekh Stroi" No 1, pp 35, 36

Demonstrates that the formula for coeff of resistance, obtained from logarithmic law of velocity distribution, is justified also for new generalized law, established by A. D. Al'tshul' in his work published in this same issue. This is explained by fact that certain variations of

199T40

USSR/Engineering - Hydrodynamics (Contd) Jan 51

velocities in the core of flow have almost no effect on the value of hydraulic resistance, detd chiefly by near-wall conditions subordinate to logarithmic law.

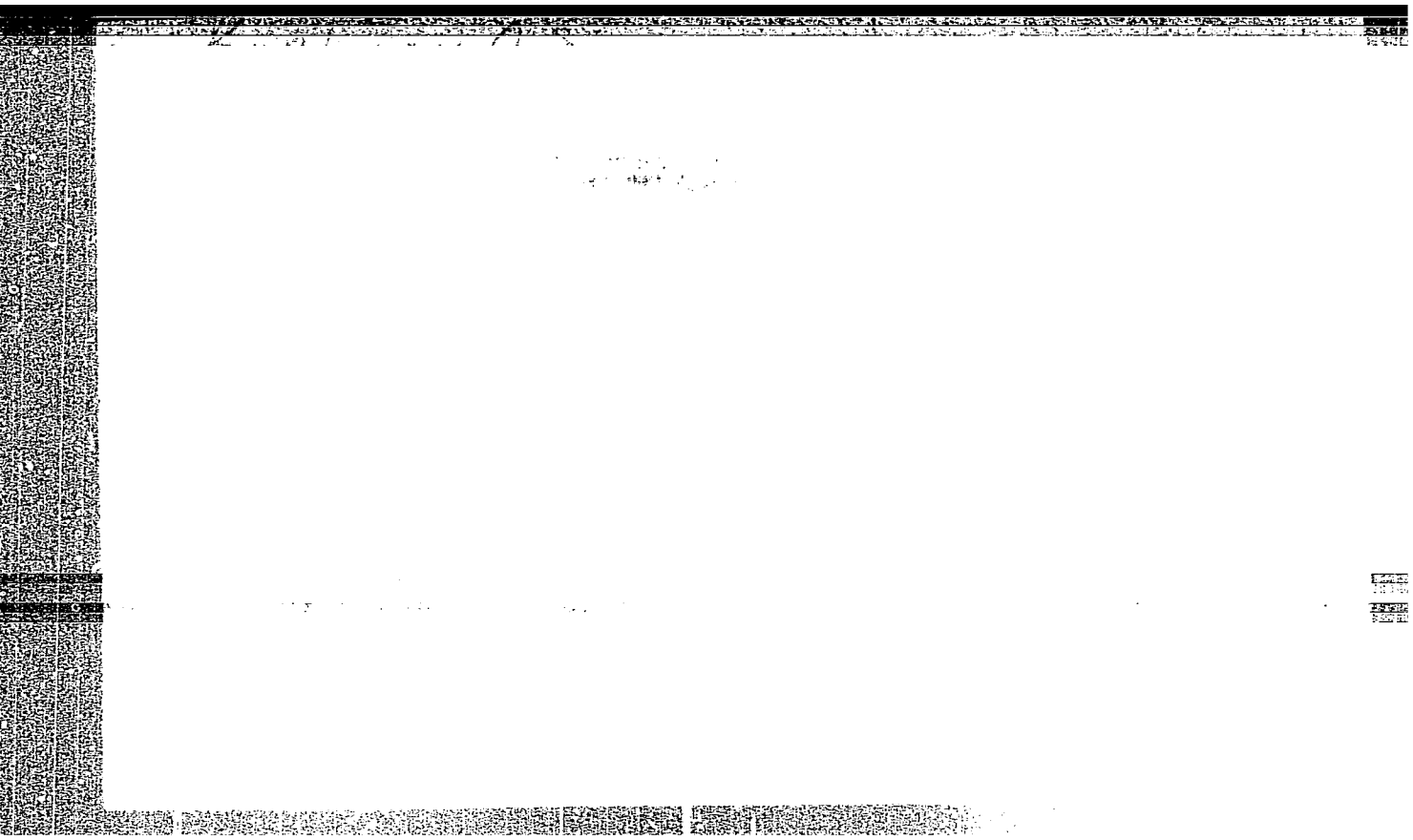
199T40

BERLYANT, O. S.

PARIYSKIY, N.N.; BERLYAND, O.S.

Effect of seasonal changes in atmospheric circulation on the velocity of the earth's rotation. Trudy Geof.inst. no.19:103-122 '53. (MLRA 7:3)

(Earth--Rotation) (Atmosphere)



APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010009-4"

BERLYAND, O.S.; SOKOLOVSKAYA, L.A.

The functions $i^n \operatorname{erfc} x$. Inzh.-fiz.zhur. no.11:121-124 N '58.
(MIRA 12:1)

1. Institut prikladnoy geofiziki AN SSSR, G. Moskva.
(Thermal diffusivity) (Errors, Theory of)

BERLYAND, O.S.; SEDUNOV, Yu.S.

Solution of the equation of turbulent diffusion. Inzh.-fiz.zhur. no.2:107-112 F '59. (MIRA 12:3)

1. Institut prikladnoy geofiziki AN SSSR, g. Moskva.
(Calculus of operations) (Diffusion)

24(8) SOV/170-59-5-10/18

AUTHOR: Berlyand, O.S.

TITLE: On One Method of Solving the Diffusion Equation (Heat Conductivity) (Ob odnom metode resheniya uravneniya diffuzii (Teploprovodnosti))

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 5, pp 70-87 (USSR)

ABSTRACT: The equation of diffusion, having the following form:

$$\frac{\partial q}{\partial t} - W\frac{\partial q}{\partial z} + u(z)\frac{\partial q}{\partial x} = K_x\frac{\partial^2 q}{\partial x^2} + K_y\frac{\partial^2 q}{\partial y^2} + K_z\frac{\partial^2 q}{\partial z^2}$$

where

$$u(z) = \sum_{m=0}^{K} a_m z^m$$

is solved by the author under assumptions that W, a_k, K_x, K_y and K_z are constant and the initial and boundary conditions look as follows: $q = Q\delta(x)\delta(y)\delta(z-h)$ at $t = 0$;

$q = 0$ at $\sqrt{x^2 + y^2 + z^2} \longrightarrow \infty$;

$q = 0$ at $z = 0$.

Card 1/2

On One Method of Solving the Diffusion Equation (Heat Conductivity) SOV/170-59-5-10/18

Here Q is an amount of substance which appeared at the initial instant in a point with coordinates: $x = y = 0$; $z = h$ (in the source). The solution of this equation is of importance, in particular in problems on diffusion of an admixture in a free atmosphere. In this particular case, the meaning of the symbols in the equation is the following: xy - is the surface of the Earth (flat); z - is vertical coordinate; W - is the velocity of the falling particles; u(z) - is the horizontal component of the wind velocity; K_x, K_y and K_z are coefficients of turbulent diffusion; q - is the concentration of the substance. The author expounds the method of solving this equation and explains the theoretical basis of this method.

There are 4 Soviet references.

ASSOCIATION: Institut prikladnoy geofiziki AN SSSR (Institute of Applied Geophysics of the AS USSR), Moscow.

Card 2/2

16(1)

AUTHOR: Berlyand, O.S.

SOV/20-124-3-2/67

TITLE: On Some Asymptotic Estimations (O nekotorykh asimptoticheskikh otsenkakh)

PERIODICAL: Doklady Akademii nauk SSSR,1959,Vol 124,Nr 3, pp 507 - 508 (USSR)

ABSTRACT: Theorem: Let be $\alpha > 0$ and constant; $a_0 < a_1 < a_2 < \ldots < a_n < \ldots$

For sufficiently large n it follows from $\prod_{k=0}^{n} a_k \sim n^{\alpha}$ that $\prod_{k=0}^{n} a_{km} \sim n^{\alpha/m}$.

Theorem: Let $F_1(\xi,z,t)$ be the original of the image $p_\xi^n f(P,z)$ and $F_2(\xi,z,t)$ be the original of the image $p_\xi^{n+2} f(P,z)$; $P = p_t - p_\xi^2$, p_t , p_ξ transformation parameters, t indicates one-sided and ξ two-sided Laplace transformations. For sufficiently large n it is $|F_a(\xi,z,t)/F_1(\xi,z,t)| \sim n/t$.

Card 1/2

On Some Asymptotic Estimations SOV/20-124-3-2/67

Theorem: Let $F_1^*(\xi,z,t)$ be the original of the image $p_\xi^n f(P,z)$ and $F_2^*(\xi,z,t)$ the original of the image $p_\xi^{n+1} f(P,z)$. For sufficiently large n it is $|F_2^*(\xi,z,t)/F_1^*(\xi,z,t)| \sim \sqrt{n/t}$.

There is 1 Soviet reference.

ASSOCIATION: Institut prikladnoy geofiziki AN SSSR (Institute for Applied Geophysics AS USSR)

PRESENTED: September 22, 1958, by A.A. Dorodnitsyn, Academician
SUBMITTED: September 22, 1958

Card 2/2

16(1)

AUTHORS: Pressman,A.Ya., and Berlyand,O.S. SOV/20-126-3-13/69

TITLE: Asymptotic Expressions for a Certain Class of Functions

PERIODICAL: Doklady Akademii nauk SSSR,1959,Vol 126,Nr 3,pp 508-510 (USSR)

ABSTRACT: The function $\psi(\lambda,x)$ be given by

$$\psi(\lambda,x) = \int_a^b \varphi(x,t)\delta(\lambda,t)dt$$

where

$$\lim_{\lambda\to 0} \delta(\lambda,t) = \delta(t-c) \quad , \quad a<c<b \ .$$

Then there holds the asymptotic formula:

$$\psi(\lambda,x) = \int_a^b \varphi(x,t)\delta(\lambda,t)dt \sim \int_a^b \varphi(x,t)\delta(t-1)dt -$$

$$- \frac{1}{12\nu}\int_a^b \varphi(x,t)t^2(1+\ln t - t)\,\delta^{(4)}(t-1)dt =$$

$$= \varphi(x,t)\Big|_{t=1} - \frac{1}{12\nu}\frac{d^{(4)}}{(dt)^4}\left[\varphi(x,t)t^2(1+\ln t - t)\right]_{t=1} \ ; \quad \nu = \frac{1}{\lambda} \ .$$

Card 1/2

Asymptotic Expressions for a Certain Class of Functions SOV/20-126-3-13/69

With the aid of this relation the authors obtain asymptotic expressions for the function of the parabolic cylinder and a Whittacker-function.
There are 3 references, 1 of which is Soviet, and 2 American.

ASSOCIATION: Institut prikladnoy geofiziki Akademii nauk SSSR (Institute of Applied Geophysics, AS USSR)

PRESENTED: February 23, 1959, by A.A.Dorodnitsyn, Academician

SUBMITTED: February 23, 1959

Card 2/2

16.6800(1024,1250,1344)
9.7000

84320
S/170/60/003/009/016/020X
B019/B060

AUTHORS: Berlyand, O. S., Gavrilova, R. I., Prudnikov, A. P.

TITLE: Functions Satisfying the Differential Equation y" ± 2xy' ± 2ny = 0

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 9, pp. 103-107

TEXT: In the first part of the present paper it is shown that the function y" + 2xy' - 2ny = 0 is satisfied by the integral functions

$$i^n\mathrm{erfc}x = \int_x^\infty i^{n-1}\mathrm{erfc}\xi\,d\xi \qquad (n \geqslant 1), \text{ for } i^0\mathrm{erfc}x = \mathrm{erfc}x = \frac{2}{\sqrt{\pi}}\int_x^\infty \exp(-\xi^2)d\xi .$$

Also examined was the function $I^n\mathrm{erfc}x = A_n i^n\mathrm{erfc}x$, with $I^0\mathrm{erfc}x = i^0\mathrm{erfc}x$. Such series as, e.g., the MacLaurin series were obtained:

Card 1/2

84320
S/170/60/003/009/016/020 X
B019/B060

Functions Satisfying the Differential Equation $y'' \pm 2xy' \pm 2ny = 0$

$$I^n erfcx = \sum_{m=0}^{\infty} (-1)^m \frac{A_n}{A_{n-m}} \cdot \frac{x^m}{m!}$$ (3). In the second part the differential equation $y'' + 2xy' + 2ny = 0$ is shown to be satisfied by the function $i^{-n}erfcx$, and in the third part the Hermitian polynomial $H_n(x)$ is found to satisfy the differential equation $H''_n(x)-2xH'_n(x)+2nH_n(x) = 0$ and $H_{-n}(x)$ the differential equation $H''_{-n}(x) - 2xH'_{-n}(x) - 2nH_{-n}(x) = 0$. The following relations exist between the functions $H_n(x)$, $H_{-n}(x)$, $i^n erfcx$, and $i^{-n}erfcx$:

$$i^{-(n+1)}erfcx = \frac{2}{\sqrt{\pi}} e^{-x^2} H_n(x), \quad i^n erfcx = \frac{2}{\sqrt{\pi}} e^{-x^2} H_{-n(n+1)}(x).$$

Proceeding from these relations, formulas are developed for numerical calculations. There are 5 references: 2 Soviet and 3 British.

ASSOCIATION: Vychislitel'nyy tsentr AN SSSR, g. Moskva
(Computing Center of the AS USSR, Moscow)

SUBMITTED: March 4, 1960

Card 2/2

16 (1)

AUTHOR: Berlyand, O. S.

S/020/60/130/03/012/065
B014/B014

TITLE: A Closed Solution of the Equation of Turbulent Diffusion

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 130, Nr 3, pp 526 - 529 (USSR)

ABSTRACT: The author first points out that the differential equation of turbulent diffusion (1) can be solved by a separation ansatz, which leads to the sets of equations (2) and (3). In the present paper solutions are sought only for q_z for which purpose the initial and boundary conditions are given for equations (4) and (5). The latter are solved by an operational technique. Equation (10) is thus obtained, which is shown to satisfy equation (4). It is noted that equation (5) has a trivial solution. For the purpose of calculating the concentration of air pollution on the Earth's surface, equation (10) is transformed into (11) (z = 0). The integral is computed after having been divided into two parts. It is shown that this integral depends but little on altitude, so that the distribution of concentration on the Earth's surface is not strongly influenced by the chosen profile of the vertical wind component. The results of

Card 1/2

A Closed Solution of the Equation of Turbulent Diffusion

S/020/60/130/03/012/065
B014/B014

calculations contained in figure 2 showed the following: One obtains better results if, instead of the mean vertical wind velocity, the profile of vertical wind velocity is applied. Furthermore, the form of the function of vertical wind velocity has no considerable influence upon the concentration of pollution near the Earth's surface. The author thanks A. G. Zimin for a discussion of the results. There are 2 figures.

ASSOCIATION: Institut prikladnoy geofiziki Akademii nauk SSSR (Institute of Applied Geophysics of the Academy of Sciences, USSR)

PRESENTED: October 12, 1959, by A. A. Dorodnitsyn, Academician

SUBMITTED: October 12, 1959

Card 2/2

BERLYAND, O.S.; PRESSMAN, A.Ya.

Evaluation of the influence of the bottom layer on the precipitation of a heavy admixture from the higher levels of the atmosphere when the wind varies with the height. Dokl. AN SSSR 135 no.2: 301-304 N '60. (MIRA 13:11)

1. Institut prikladnoy geofiziki AN SSSR. Predstavleno akademikom A.A.Dorodnitsynym.
(Atmosphere)

BERLYAND, O. S.

"The Solution Method of a Single Heat Conduction Equation."

Report submitted for the Conference on Heat and Mass Transfer, Minsk, BSSR, June 1961.

BERLYAND, O.S.

Doc Phys-Math Sci - (diss) "Distribution of impurities in the open atmosphere in a wind field varying with altitude." Moscow 1961. 9 pp; (Inst of Applied Geophysics of the Academy of Sciences USSR) 250 Copies; price not given; (KL, 5-61 sup, 171)

BERLYAND, O.S.; GAVRILOVA, R.I.; PRUDNIKOV, A.P.; DITKIN, V.A., prof., otv. red.; BARABANOVA, Ye., red. izd-va; SIDERKO, N., tekhn. red.

[Tables of integral functions, errors, and Hermitian polynomials] Tablitsy integral'nykh funktsii oshibok i polinomov Ermita. Minsk, Izd-vo Akad. nauk BSSR, 1961. 163 p. (MIRA 14:10)
(Mathematics—Tables, etc.)

S/020/61/140/001/002/024
C111/C222

AUTHORS: Berlyand, O.S., and Pressman, A.Ya.

TITLE: Asymptotic representations and certain evaluations for integral functions of errors of arbitrary order

PERIODICAL: Akademiya nauk SSSR. Doklady, v.140, no. 1, 1961, 12-14

TEXT: The authors consider properties of the function i^{μ} erfc z (or briefly $i_{\mu}(z)$) for real values of the index and the argument.

1. $\mu = \nu > -1$; $z = x \geqslant 0$. If x and ν increase simultaneously, where $\nu/x\sqrt{2} \leq 1$ then it holds :

$$i_{\nu}(x) \sim \frac{2e^{-x^2 - \nu^2/4x^2}}{\sqrt{\pi}(2x)^{\nu+1}} \left[1 + \frac{1}{6\nu}\left(1 - 11\frac{\nu^2}{2x^2} + 3\frac{\nu^4}{4x^4}\right)\right] \qquad (5)$$

For $(2x)^2 \geq (\nu + 1)(\nu + 3)$ and $\nu \geqslant -1$ it holds :

$$i_{\nu}^2(x) \geqslant i_{\nu-1}(x) i_{\nu+1}(x) . \qquad (8)$$

Card 1/3

2. $\mu = \nu > -1$; $z = -x \leq 0$. Then for large x it holds :

$$i_{+\nu}(-x) = \frac{2}{\Gamma(1+\nu)} x^{\nu} \left\{ \sum_{k=0}^{N-1} \frac{\Gamma(1+\nu)}{k!\,\Gamma(1+\nu-2k)} (2x)^{-2k} + O\left[(2x)^{-2N}\right] + R_{\nu} \right\}, \qquad (11)$$

where $R_{\nu} < \sqrt{\frac{\pi}{2}} (2/x)^{\nu}$ erfc $(x/\sqrt{2})$. For $(2x)^2 \geq 2\nu^2$ it holds :

$$i_{\nu}^2(-x) \geq i_{\nu-1}(-x) i_{\nu+1}(-x) \quad . \qquad (12)$$

(12) holds also for $\nu \geq -1$ as (8).

3. $\mu = -\nu \leq -1$; $z = x \geq 0$. The formulas are obtained by using the analytic continuation of $\Gamma(1+\mu)$ into the region Re $\mu \leq -1$ and replacing $+\nu$ by $-\nu$ in the developments of the points 1. and 2. For $2x > \nu + 1$ it holds :

$$i_{-\nu}^2(x) \geq i_{-\nu-1}(x)\, i_{-\nu+1}(x) \quad \text{for } -\nu \leq -1 \qquad (16)$$

Card 2/3

4. $\mu = -\nu \leq -1$; $z = -x \leq 0$. The formulas are obtained as above by a change of the sign for ν. For integral ν : $\nu = n$ and large x it holds

$$i_{-n}(-x) \sim \frac{2}{\sqrt{\pi}} e^{-x^2} (-2x)^{n-1} \quad . \tag{19}$$

For fractional ν and large x it holds

$$i_{-\nu}(x) \sim \frac{2}{\Gamma(1-\nu)} x^{-\nu} \quad . \tag{20}$$

A number of further partially known formulas (amongst others concerning the connection with the Hermitean polynomials) is given.
There are 3 Soviet-bloc and 2 non-Soviet-bloc references. The reference to the English language publication reads as follows : E.T. Whittacker, G.N.Watson: Kurs sovremennogo analiza (Modern analysis), 2, 1934.

PRESENTED: March 21, 1961, ba A.A. Dorodnitzyn, Academician

SUBMITTED: March 20, 1961

Card 3/3

16.6100

S/020/62/147/005/002/032
B172/B112

AUTHORS: ~~Berlyand, O. S.~~, Nazarov, I. M., Pressman, A. Ya.

TITLE: An i^nerfc - or complex Gauss - Poisson distribution

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 147, no. 5, 1962, 1005-1007

TEXT: n events are considered obeying a Poisson law the parameter of which is a random quantity which corresponds to a standard division N(x,a,o) the intersection point of which has an abscissa equal to zero:

$$P(n) = \frac{2}{1+\operatorname{erf}\frac{a}{\sigma\sqrt{2}}} \quad \frac{1}{\sqrt{2\pi}\,\sigma\, n!} \int_0^\infty x^n e^{-x-(a-x)^2/2\sigma^2} dx$$

$$= \frac{e^{y^2/4-a}}{1+\operatorname{erf}\frac{a}{y}} \quad \frac{1}{\sqrt{2\pi}\,\sigma\, n!} \int_0^\infty x^n e^{-x-(a-x)^2/2\sigma^2} dx \qquad (y = \sigma\sqrt{2}).$$

Card 1/2

S/020/62/147/005/002/032
B172/B112

An i^nerfc - or complex Gauss - ...

The probability distribution for such events is called an i^nerfc distribution. The mathematical expectation and the dispersion of such distributions are calculated.

ASSOCIATION: Institut prikladnoy geofiziki, Akademii nauk SSSR (Institute of Applied Geophysics of the Academy of Sciences USSR)

PRESENTED: June 25, 1962, by N. N. Bogolyubov, Academician

SUBMITTED: June 20, 1962

Card 2/2

PETROVA, G.M.; BERLYAND, O.S.

Estimation of the vertical scattering coefficient of a precipitating foreign substance in the atmosphere taking as a basis its distribution on the earth's surface. Dokl. AN SSSR 146 no.6:1318-1321 O '62. (MIRA 15:10)

1. Predstavleno akademikom Ye.K. Fedorovym.
(Air—Pollution)

L 07989-67 EWT(1) GW

ACC NR: AP6009417 SOURCE CODE: UR/0020/66/166/006/1315/1318

AUTHORS: Petrova, G. M.; Mar'in, N. P.; Borlyand, Q. S.

ORG: none

TITLE: Precipitation of a cloud of interacting particles and the formation of "dust" sources as a result of atmospheric diffusion

SOURCE: AN SSSR. Doklady, v. 166, no. 6, 1966, 1315-1318

TOPIC TAGS: atmospheric diffusion, atmospheric cloud, atmospheric precipitation, turbulent flow

ABSTRACT: The concentration distribution of particles in the atmosphere, interacting with precipitating clouds, is calculated analytically. Particles which form dust sources and are distinct from the clouds are described by the source term $Q = Q_0 f(t)\delta(x)\delta(y)\delta[z - h(1 - t/T)] \times \times U(1 - t/T)]$.

To determine the particle concentration q, the following equation of turbulent mixing is solved: $\partial q/\partial t = K_x \partial^2 q/\partial x^2 + K_y \partial^2 q/\partial y^2 + K_z \partial^2 q/\partial z^2 - u\,\partial q/\partial x + w\,\partial q/\partial z + Q.$

Card 1/2 UDC: 532.516

ACC NR: AP6009417

To integrate the above equation, all coefficients are assumed constant and the distribution of particles on the earth's surface is expressed by

$$q^* = \int_0^\infty K_x \frac{\partial \eta}{\partial x}\Big|_{x=0} dt.$$

The solution is given in terms of Whitaker and Gamma functions and is expanded in Taylor series around the point t = T (T = h/V). This leads to an expression of the form

$$q^* \simeq H\Gamma(2) A^{-2} \exp\left[-d - \frac{a}{b} - bT\right] \int_0^\infty \exp\left[-\frac{Bh^2}{4K_z T^2}(t-T)^2\right] dt -$$

$$- H \int_T^\infty \exp(-C) \int_0^{t-T} F_1(t, \xi)\, d\xi\, dt.$$

The equation is then used to calculate K_x and K_z (mixing length coefficients) in terms of experimentally determined values of q*. Several special examples are considered. The authors express their acknowledgements to A. Ya. Pressman for his remarks. This paper was presented by Adademician Ye. K. Fedorov on 9 June 1965. Orig. art. has: 11 equations.

SUB CODE: 04, 20/ SUBM DATE: 20May64/ ORIG REF: 001

Card 2/2 gd

BERLYAND, O.S.; KIRICHENKO, L.V.; KOGAN, R.M.

Theory of McDonald's incomplete functions. Dokl. AN SSSR 160 no.2: 306-307 Ja '65. (MIRA 18:2)

1. Institut prikladnoy geofiziki AN SSSR. Submitted July 6, 1964.

ACC NR: AT7001920 SOURCE CODE: UR/3010/66/000/017/0055/0058

AUTHOR: Berlyand, O. S.; Yerokhina, R. A.; Kolacheva, Z. A.

ORG: none

TITLE: Exchange of air masses between the stratosphere and troposphere in the Northern Hemisphere

SOURCE: AN SSSR. Mezhduvedomstvennyy geofizicheskiy komitet. Geofizicheskiy byulleten', no. 17, 1966, 55-58

TOPIC TAGS: atmospheric circulation, stratosphere, troposphere, atmospheric temperature, temperature distribution

ABSTRACT: This article presents the results of an investigation of the mechanism of exchange of air masses between the troposphere and stratosphere for given mean annual zonal distributions of temperature in the 0—16 km layer and the distribution of atmospheric pressure on the Earth's surface by finding a wind velocity field for determining the vertical motion of air masses. It was calculated that during a year an air mass weighing $3 \cdot 10^{14}$t, which amounts to 5% of the weight of the entire atmosphere, descends from the tropopause in the 25—35°N zone. The weight of the 10—16-km air layer amounted to approximately 1/6 of the weight of the entire atmosphere. Thus, it is concluded that exchange of the entire air mass between the troposphere and stratosphere occurs within about 3.5 years in the 25—35°N region. Orig. art.

APPROVED FOR RELEASE: 06/08/2000 CIA-RDP86-00513R000205010009-4"

ACC NR: AT7001920

has: 5 formulas and 3 figures.

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 001

Card 2/2

BERLYAND, S. S.

"Present Knowledge about the Transmission of Viruses by Successive Generations of Plants," in Abstracts of Reports of the All Union Conference on the Study of Ultra-microbes and Filtrable Viruses (14-18 December 1935), Publishing House of the Academy of Science USSR, Moscow, 1935, pp. 40-41. 448.39 Ak1

So: SIRA Si 90-53, 15 Dec. 1953

BERLYAND S S.

How our country's high-quality variety of cultured plants was created
Moskva, Gos. izd-vo sel'khoz lit-ry, 1951

BERLYAND, S.S.

Cheif engineer Transportation Administration Narkokchermet
"The State and Problems of Reestablishment of Industrial Transportation in Ferrous Metallurgy"
Vest. Ak. Nauk SSSR, no.9, 1944

BERLYAND, S.S.; PLESHKOV, L.Ye.; STOLYAROV, A.I.; YUREVICH, G.S.; ROZANOV, N.G.; KUTSENKO, I.S., redaktor; BEKKER, O.G., tekhnicheskiy redaktor

[Railroad transportation in metallurgy; a handbook] Zheleznodorozhnyy transport v metallurgii; spravochnik. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1951. 592 p. [Microfilm] (MLRA 10:1)
(Railroads, Industrial)

BERLYAND, S.S., inzhener, redaktor; MIKHAYLOVA, V.V.; tekhnicheskiy redaktor

[General report on the progressive practice of intraplant railroad transport workers; Novo-Tagil'skiy Metallurgical Plant] Kompleksnoe obobshchenie peredovogo opyta rabotnikov vnutrizavodskogo zheleznodorozhnogo transporta. (Novo-Tagil'skii metallurgicheskiy zavod). Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 26 p. (MLRA 7:10)
(Railroads, Industrial)

BERLYAND, Sigizmund Solomonovich

N/5
631.303
.B5

Gibridizatsiya Rasteniy [The Hybridization of Plants] Moskva, Sel' Khozgiz, 1957.

317 (1) P. Illus., Diagrs.

"Literatura": P. 317-318.

BERLYAND, S.S.

133-11-14/19

AUTHOR: Berlyand, S.S.

TITLE: Trends in the Development of Works' Internal Railway Transport (Puti razvitiya vnutrizavodskogo zheleznodorozhnogo transporta)

PERIODICAL: Stal, 1957, No.11, pp. 1028 - 1031 (USSR)

ABSTRACT: Types of rails and rolling stock, which are being introduced on iron and steel works are outlined.

AVAILABLE: Library of Congress

Card 1/1

BERLYAND, S.S., inzh.

Strengthening the construction of railroad tracks at iron and steel plants. Biul. TSNIICHM no.3:4-10 '58. (MIRA 11:5)
(Railroad, Industrial--Track)

BERLYAND, S.S.

[Essentials of plant acclimatization] Chto takoe akklimatizatsiia rastenii. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1959. 67 p. (MIRA 13:10)

(Acclimatization (Plants))

AVERBUKH, Abram Yefimovich; BERLYAND, S.S., inzh., retsenzent; red.; SIDOROV, V.N., inzh., red.izd-va; KARASEV, A.I., tekhn.red.

[Organization of railroad haulage at metallurgical plants] Organizatsiia zheleznodorozhnykh perevozok na metallurgicheskikh zavodakh. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1959. 483 p. (MIRA 12:4)
(Metallurgical plants) (Railroads, Industrial)

SHIROKOV, Viktor Nikolayevich; BERLYAND, S.S., red.; DYNIN, I.A., red.izd-va; DOBUZHINSKAYA, L.V., tekhn.red.

[Car dumpers and their maintenance] Vagonooprokidyvateli i ikh remont. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 119 p. (MIRA 13:8)
(Railroads--Cars--Maintenance and repair)
(Dumping appliances)

RYABIN'KIY, Bronislav Yakovlevich; BERLYAND, S.S., inzh., retsenzent; GERASIMENKO, V.F., inzh., retsenzent; GRUDSKIY, Ye.B., inzh., retsenzent; DASHEVSKIY, Ya.I., inzh., retsenzent; DVORIN, S.S., inzh., retsenzent; KAMALOV, O.M., inzh., retsenzent; KARPMAN, M.A., inzh., retsenzent; KASHCHENKO, D.S., inzh., retsenzent; KOROLEV, M.N., inzh., retsenzent; KORSAKOV, A.A., inzh., retsenzent; LISENKO, T.P., inzh., retsenzent; PEKELIS, I.B., inzh., retsenzent; REVYAKIN, A.A., inzh., retsenzent; ROMANOVICH, N.D., inzh., retsenzent; PRIYMAK, I.A., prof., red.; AVRUTSKAYA, R.F., red.izd-va; ISLENT'YEVA, P.G., tekhn.red.

[Planning and economics of metallurgical plants] Planirovanie i ekonomika metallurgicheskikh zavodov. Izd.2., dop. i perer. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 736 p. (MIRA 13:2)

(Metallurgical plants)

GENESIN, Aleksandr Mikhaylovich; MOSHKEVICH, Isay Yevseyevich; BERLYAND, S.S., red.; KHUTORSKAYA, Ye.S., red. izd-va; KLEYNMAN, M.R., tekhn. red.

[Planning and work analysis of the railroad transportation sections of metallurgical plants] Planirovanie i analiz raboty zheleznodorozhnykh tsekhov metallurgicheskikh zavodov. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 69 p. (MIRA 14:9)

(Railroads, Industrial) (Metallurgical plants)

BERLYAND, Semen Semenovich; DANILEVSKIY, V.V., red.; VAGIN, A.A., red. izd-va; MIKHAYLOVA, V.V., tekhn. red.

[Brief manual for the railroad worker in ferrous metallurgy] Kratkii spravochnik zheleznodorozhnika chernoi metallurgii. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 231 p. (MIRA 14:8)
(Railroads, Industrial--Maintenance and repair)

BERLYAND, Sigizmund Solomonovich; BOYARSKAYA, L.S., red.; GUREVICH, M.M., tekhn. red.

[Plant hybridization] Gibridizatsiia rastenii. Moskva, Gos. izd-vo sel'khoz.lit-ry, 1957. 317 p. (MIRA 15:2)
(Hybridization, Vegetable)

MELESHKIN, S.M., gornyy inzhener; BERLYAND, S.S., gornyy inzhener; SIROTKIN, Z.L., inzh.; DENISOV, A.G., inzh.; TERNOVSKIY, G.I., inzh.; BEKHTEREV, Yu.I., inzh.; ZOTOV, A.V., inzh.; IVANOV, E.I., inzh.; VASIL'YEV, Ye.A., inzh.; SOLOV'YEVA, L.G., inzh.; D'YACHENKO, V.F., inzh.

Replies to V.V. Shan'ko's article "Efficient limits of using truck haulage in open pits." Gor. zhur. no.1:75-77 Ja '62. (MIRA 15:7)

1. Gosudarstvennyy nauchno-ekonomicheskiy sovet Soveta Ministrov SSSR (for Meleshkin). 2. Promtransproyekt Gosstroya SSSR (for Berlyand). 3. Belorusskiy avtozavod (for Sirotkin, Denisov, Ternovskiy, Bekhterev, Zotov, Ivanov). 4. Gosudarstvennyy institut po proyektirovaniyu razrabotki rudnykh mestorozhdeniy v yuzhnykh rayonov SSSR, Khar'kov (for Vasil'yev, Solov'yeva, D'yachenko).

(Mine haulage)
(Shan'ko, V.V.)

RYABIN'KIY, Bronislav Yakovlevich; ADARYUKOV, G.I., inzh., retsenzent; BERLYAND, S.S., inzh., retsenzent; GERASIMENKO, V.A., inzh., retsenzent; GRUDSKIY, V.A., inzh., retsenzent; DASHEVSKIY, Ye.B., inzh., retsenzent; KARPMAN, Ya.I., inzh., retsenzent; KOROLEV, M.N., inzh., retsenzent; KORSAKOV, A.A., inzh., retsenzent; LISENKO, T.P., inzh., retsenzent; PEKILIS, I.B., inzh., retsenzent; REVYAKIN, A.A., inzh., retsenzent; ROMANOVICH, N.D., inzh., retsenzent; FILIPPOV, S.M., inzh., retsenzent; BRUSHTEYN, A.I., red.izd-va; DOBUZHINSKAYA, L.V., tekhn. red.

[Planning and the economics of metallurgical plants] Planirovanie i ekonomika metallurgicheskikh zavodov. Izd.3., perer. i dop. Moskva, Metallurgizdat, 1963. 754 p. (MIRA 16:4)
(Steel industry--Management)

KOSTENETSKIY, Kirill Pavlovich; BERLYAND, S.S., red.; YUSFIN, Yu.S., red.izd-va; MIKHAYLOVA, V.V., tekhn. red.

[Development of transportation in metallurgy; problems in the general plan of and transportation in iron and steel plants] Razvitie transporta v metallurgii; voprosy general'nogo plana i transporta metallurgicheskikh zavodov. Moskva, Metallurgizdat, 1963. 332 p. (MIRA 17:3)

BERLYAND, T. G.

"Radiation and Heat Balance of the ETC", Trudy GGO (Proceedings of the GGO) No 10, 1948.

SO: U-3039, 11 Mar 1953

30765. BERLYAND, T. G.

Radiatsionnyy i teplovoy balansy poverkhosti sushi vnetropicheskikh shirot severnogo polushariya. Trudy Glav. geofiz. observatirii, vyp. 18, 1949, c. 22-50. -- Bibliogr: 26 nazv.

BERLYAND, T.

USSR/Geophysics - Terrestrial Radiation Jan/Feb 52

"Determining the Earth's Effective Radiation Taking the Influence of Cloudiness Into Account," M. Berlyand, T. Berlyand, Main Geophys Obs

"Iz Ak Nauk SSSR, Ser Geofiz" No 1, pp 64-78

Suggests a theoretical method for computing the effective terrestrial radiation under actual conditions taking into account the influence of cloudiness. Discusses comparison and analysis of some known empirical relations. Gives tables and simple formulas for cloudy and clear sky. Explains effect of cloudiness in various climates. Authors thank M. I. Budyko and Prof M. I. Yudin for advice. Submitted 3 May 51. 205T45

Berlyand, T. G

BERLYAND, T.G.

Changes in soil moisture content and in the heat balance during arid years. Trudy GGO no.29:85-96 '52. (MIRA 11:1)
(Soil moisture) (Solar radiation)

USSR/ Geography - Meteorology

Card 1/1 Pub. 45 - 3/17

Authors : Budyko, M. I.; Berlyand, T. G.; and Zubenok, L. I.

Title : Heat balance of the earth's surface

Periodical : Izv. AN SSSR. Ser. geog. 3, 17-41, May - Jun 1954

Abstract : An account is given of the work of scientists in the past in studying the problem of the heat balance of the earth's surface. From the results of these studies a formula is derived as follows: $R + LE + R + A = 0$, where R is the radiation balance of the underlying surface; LE, the expenditure of heat in evaporation; P, the turbulent heat exchange between the underlying surface and the atmosphere; and A, the heat exchange between the underlying surface and the lower strata. In harmony with this basic formula an analysis is made of the heat exchange on land and sea over the whole world, taking into account also the factor of light reflection. Thirty-four references; 27 USSR; 5 German; 2 USA (1925-1952). Maps; graphs; tables.

Institution: A. I. Boekov Main Geophysics Observatory

Submitted: .....

BERLYAND, T. G., BUDYKO, M. I. and ZUBENOK, L. I.

"Procedure for Climatological Computations of the Components of Heat Balance". Trudy Gl. Geofiz. Observ., No 48, pp 5-16, 1954.

The equation of heat balance can be represented in the form $R + LE + P + A = 0$, where R is the radiational balance of the underlying surface, LE is the expenditure of heat in evaporation, P is the turbulent heat exchange between the underlying surface and the lower lying layers. For dry land the quantity A is equal to the change in heat content of soil over a definite period and inthe mean year is close to zero. For oceans the quantity A in the mean year is equal to the input or output of heat in consequence of horizontal heat exchange connected with sea currents. In conclusion the authors present examples of computations of the components of heat balance for Moscow and a point on the ocean. (RZhGeol, No 11, 1955)

SO: Sum no 884, 9 Apr 1956

BERLYAND, T. G.

Yearly Behavior of the Total Solar Radiation According to Data of Actual Observations

The author summarizes the measured values of the total radiation for individual months and for the year as a whole at 139 pints arranged in the interval of latitudes from 84° south to 34° north. The graph of the distribution of total radiation according to latitude displays its general increase from pole to equator and increase in the range of the annual variations in the radiation at one and the same latitude. Decrease in the values of the annual magnitudes of the solar radiation in the lower latitudes is explained by the increased cloudiness in the equatorial regions. The author graphically represents the latitudinal variations in the ratio of total radiation for June and December to the total radiation for the year as a function of latitude. In June this ratio decreases with decreasing latitude, and in December it increases, but the fraction of the monthly influxes of total radiation (out of the yearly value) for both June and December is almost the same for the lower latitudes. (RZhGeol, No. 4, 1955) Tr. Gl. geofiz. observ., No. 48, 1954, 17-25.

SO: Sum. No. 744, 8 Dec 55 - Supplementary Survey of Soviet Scientific Abstracts (17)

BERLYAND, T.G.

Annual total solar radiation computed on the basis of factual observational data. Trudy GGO no.48:17-25 '54. (MLRA 10:7)
(Solar radiation)

BERLYAND, T.G.; YEFIMOVA, N.A.

Monthly charts showing total solar radiation and radiation balance for the Soviet Union. Trudy GGO no.50:48-82 '55. (MLRA 9:8)
(Solar radiation)

SOV/124-58-1-845

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 1, p 111 (USSR)

AUTHOR: Berlyand, T. G.

TITLE: The Atmospheric Heat Balance of the Northern Hemisphere (Teplovoy balans atmosfery severnogo polushariya)

PERIODICAL: V sb.: A. I. Voyeykov i sovrem. probl. klimatol. Leningrad, Gidrometeoizdat, 1956, pp 226-252

ABSTRACT: Utilizing various data available from world literature the author constructs maps of various components of the atmospheric heat balance of the Northern hemisphere. Annual maps, as well as representative monthly maps for the various seasonal periods (March, June, September, and December) are provided. The presentation includes maps of the radiational balance, the turbulent heat flux (annual only), the heat of condensation, assumed to be approximately equal to Lr, where L is the latent heat of condensation and r is the amount of precipitation, which is determined as the residual term of the atmosphere heat-balance equation. Graphs of the zonal distribution of the above-mentioned quantities are adduced. A thorough analysis of the material obtained is provided. 96 refs.

Ye. M. Dobryshman

Card 1/1

BERLYAND, T.G.

Zonal distribution of currents of total solar radiation entering the earth's surface. Meteor.i gidrol. no.9:22-25 S '56.
(MLRA 9:11)

(Solar radiation)

UTIMAGANBETOV, M.M., kand.geogr.nauk; BERLYAND, T.G., kand.geogr.nauk; BEZVERKHNIY, Sh.A., kand.fiz.-matem.nauk; BAYDAL, M.Kh., kand. geogr.nauk; KUZNETSOV, A.T., kand.geogr.nauk; CHUBUKOV, L.A., doktor geogr.nauk; SHVYREVA, Yu.G., mladshiy nauchnyy storudnik; UTESHEV, A.S., kand.geogr.nauk; GOL'TSBERG, I.A., doktor geogr. nauk; KLYKOVA, Z.D., starshiy nauchnyy sotrudnik; MEN'SHIKOVA, Ye.A., mladshiy nauchnyy sotrudnik; GEL'MGOL'TS, N.F., starshiy nauchnyy sotrudnik; PROKHOROV, I.I., starshiy nauchnyy sotrudnik; TKACHENKO, N.S., mladshiy nauchnyy sotrudnik; ZHDANOVA, L.P., red.; BRAYNINA, M.I., tekhn.red.

[Climate of Kazakhstan] Klimat Kazakhstana. Pod red. A.S.Uteshova. Leningrad, Gidrometeor.izd-vo, 1959. 366 p.
(MIRA 13:5)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby. 2. Kazakhskiy pedagogicheskiy institut (KazPI) (for Utimagambetov). 3. Glavnaya geofizicheskaya observatoriya im. A.I.Voyeykova (GGO) (for Berlyand, Gol'tsberg). 4. Kazakhskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut KazNIGMI) (for Bezverkhniy, Baydal, Kuznetsov, Uteshev, Klykova, Men'shikova, Gel'mgol'ts, Prokhorov, Tkachenko). 5. Institut geografii Akademii nauk SSSR (IG AN SSSR) for Shvyreva).
(Kazakhstan--Climate)

BERLYAND, T. G.

PHASE I BOOK EXPLOITATION SOV/5475

USSR. Glavnoye upravleniye gidrometeorologicheskoy sluzhby

Teplovoy i vodnyy rezhim zemnoy poverkhnosti (Thermal and Water Regime of the Earth's Surface) Leningrad, Gidrometeoizdat, 1960, 191 p. Errata slip inserted. 600 copies printed.

Sponsoring Agency: Glavnoye upravleniye gidrometeorologicheskoy sluzhby pri Sovete Ministrov SSSR.

Eds.(Title page): I. P. Gerasimov, Academician, M. I. Budyko, Doctor of Physics and Mathematics, and A. P. Gal'tsov, Doctor of Geographical Sciences; Ed.: M. M. Yasnogorodskaya; Tech. Ed.: M. I. Braynina.

PURPOSE: This publication is intended for geophysicists, geographers, climatologists, agronomists, and agriculturists.

COVERAGE: The seventeen articles contained in this publication represent condensed versions of reports presented at the Conference on the Heat and Water Regime of the Earth's Surface, convened by the Glavnaya geofizicheskaya observatoriya im. A. I. Voyeykova (Main Geophysical Observatory imeni

Card 1/5

A. I. Voyeykov) in April 1959. Individual articles deal with the investigation of the thermal balance of the earth's surface, problems of the genesis of climate related to heat and moisture exchange, the indicators of heat and water balance in agriculture, and problems related to the effect of hydrometeorological factors upon complex geographical processes and phenomena. No personalities are mentioned. References follow individual articles.

TABLE OF CONTENTS:

Thermal and Water Regime (Cont.) SOV/5475

Davitaya, F.F. [Central Institute of Weather Forecasting]. Water and Heat Regime of the USSR and Some Problems of Agriculture 186

AVAILABLE: Library of Congress (GB665.R8)

Card 5/5

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80845

S/050/60/000/06/02/021
B007/B007

3.1800

AUTHOR: Berlyand, T. G.

TITLE: Methods for Climatological Calculations of Total Radiation

PERIODICAL: Meteorologiya i gidrologiya, 1960, No. 6, pp. 9-12

TEXT: The elaboration of an indirect method of calculating total radiation is described. This method consists of two stages: the first stage consists in determining total radiation under a cloudless sky, the second - under a cloudy sky. For the first stage the method used by V. N. Ukraintsev is mentioned. He determined the possible radiation for several points of the USSR, whereas the author of the present paper worked out this method for the purpose of determining radiation on the entire globe for a cloudless sky (Ref. 2). On the basis of the data for arctic latitudes at present available as well as of those for the tropics of the northern and southern hemisphere, Table 1 gives the precise values for the total solar radiation for all latitudes at a cloudless sky, reduced to the international standard scale of 1956. On the basis of a comparison

Card 1/2

Methods for Climatological Calculations of Total Radiation

S/050/60/000/06/02/021
B007/B007

between the precise values for the possible radiation and those obtained previously (Ref. 2) by the author, conclusions are drawn. As regards the second stage, the author in his earlier paper used the linear relation of the Angstroem-Savinov type. On the basis of these new data this relation was checked. It was found on this occasion that the relation mentioned is not linear, but that it may best be expressed by the formula $\frac{Q}{Q_o} = 1 - (a + bn)n$. Q is the actual total radiation. Q_o - the total radiation at a cloudless sky, n is the cover of clouds, a and b denote certain coefficients. b remains approximately constant and is equal to 0.38, which simplifies the calculations. By means of these relations one obtains values with the relative error - without considering the sign - of not more than 8 to 10%, and a mean error - considering the sign - of about 3%. In Table 2 the a-values varying according to latitude are given. There are 2 tables and 6 references: 5 Soviet and 1 English.

Card 2/2

BERLYAND, Tamara Grigor'yevna; BUDYKO, M.I., otv. red.; USHAKOVA, T.V., red.; YASNOGORODSKAYA, M.M., red.; BRAYNINA, M.I., tekhn. red.

[Distribution of solar radiation over continents] Raspredelenie solnechnoi radiatsii na kontinentakh. Leningrad, Gidrometeor. izd-vo, 1961. 255 p. maps. (MIRA 14:9)
(Solar radiation)

S/169/62/000/009/074/120
D228/D307

AUTHOR: Berlyand, T. G.

TITLE: Solar radiation distribution on continents

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 9, 1962, 16-17, abstract 9B112K (L., Gidrometeoizdat, 1961, 227 pp., illust., maps, 1r. 4k.)

TEXT: The main patterns in the geographic distribution of solar radiation are stated. They were obtained as a result of generalizing observational data and using contemporary climatologic calculation methods. Ch. I is devoted to the question of the world distribution of solar radiation in relation to astronomic factors. Ch. II describes methods of measuring solar radiation (instruments for measuring the short-wave radiation intensity and methods of measuring the sunshine duration and determining cloudiness). Methods for climatologic solar radiation calculations are stated in Ch. III. Ch. IV considers: the dependence of solar radiation on the form of cloudiness; the geographic distribution, the annual

Card 1/2

Solar radiation distribution ...

variation, and the diurnal variation of cloudiness; and the geographic distribution of the duration of sunshine. Ch. V gives the characteristic of the current data of observations on the world actinometric network. The question of the solar radiation's diurnal and annual course, the correlation between summary and scattered radiation in different parts of the world, and the variability of total solar radiation and its components is considered. The state of the question on the study of the summary radiation's geographic distribution is discussed in Ch. VI, and new world total solar radiation charts are described. Information is given about the radiation regime of Europe, Asia, Africa, Australia, North and Central America, the Arctic and Antarctica. 421 references. [Abstracter's note: Complete translation.]

Card 2/2

EERLYAND, T. G.

Dissertation defended at the Institute of Geography
for the academic degree of Doctor of Geographical Sciences:

"Solar Radiation on Continents."

Vestnik Akad Nauk No. 4, 1963, pp. 119-145

ACCESSION NR: AT4026426 S/2531/63/000/139/0003/0015

AUTHOR: Berlyand, T. G.; Mukhenberg, V. V.

TITLE: Role of absorbed radiation in forming a radiative balance

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy*, no. 139, 1963. Teplovoy balans (Heat balance), 3-15

TOPIC TAGS: total radiation, absorbed radiation, reflected radiation, albedo, climatic condition, humidity, effective emission, temperature, radiative energy

ABSTRACT: The total radiation received by the earth is partially absorbed by the incidence surface and partially reflected. The reflectivity is called albedo. The absorbed radiation influences local climatic conditions. Maps have been drawn for various latitudes at various seasons which characterize the distribution of absorbed radiative energy on the earth, especially on the territory of the Soviet Union. Snow and ice cover increase the local albedo. In

Card 1/2

ACCESSION NR: AT4026426

winter, the absorbed radiation is low in the Northern Hemisphere because of the small quantity of total radiation and high reflection from snow. The local radiative balance depends upon the absorbed energy and the effective emission in space. The latter increases with temperature increase and diminishes with an increase in humidity. In summer, Antarctica and the Arctic Ocean receive more radiative energy than the equatorial belt, but the high reflection diminishes the thermal influence. Orig. art. has: 1 table, 7 figures, and 2 formulas.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 16Apr64 ENCL: 00

SUB CODE: AS NO REF SOV: 011 OTHER: 003

Card 2/2

BUDYKO, M. I.; BERLYAND, T. G.; YEFIMOVA, N. A.

"Study of the solar radiation regime on the surface of the earth."

paper presented at the Atmospheric Radiation Symp, Leningrad, 5-12 Aug 64.

BERLYAND, T.G., doktor geogr. nauk; ROGOVSKAYA, Ye.G., red.

[Actinometric reference book: foreign countries; annual data] Aktinometricheskii spravochnl: zarubezhnye strany; ezhegodnye dannye. Leningra , Gidrometeoizdat, 1964. 261 p. (MIRA 17:6)

L 1733-66 EWT(1) GW

ACCESSION NR: AT5022060 UR/2531/65/000/179/0003/0027

AUTHOR: Berlyand, T. G.

TITLE: Daily variation in solar radiation in the principal climatic zones of the earth

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 179, 1965, Teplovoy balans (Heat balance), 3-27

TOPIC TAGS: climatology, solar radiation

ABSTRACT: The factors controlling the daily variation in direct, scattered, and total radiation are examined for a cloudless sky and for actual conditions. The data used are hourly values of solar radiation obtained at 64 stations of the world-wide actinometric network over a period of 2.5—15 yr. The primary factor considered was sun height and how this is reflected in latitudinal radiation variation. Graphs are presented to show how the hourly radiation value varies with sun height and with latitude for different times of the year. In the equatorial zone the sun is very high, and the length of day is fairly constant, with cloudiness the principal factor affecting amounts of radiation. Monsoon regions show seasonal variations because of seasonal cloudiness. The characteristic feature of the temperate zone is the

Card 1/2

L 1733-66

ACCESSION NR: AT5022060

great contrast in solar radiation between summer and winter, caused by the large annual amplitude of sun height at noontime and by the length of day. Greatest variation in noon height of the sun and in length of day is found in the Arctic and Antarctic. Because of cyclonic circulation, the Arctic offers less favorable conditions for incidence of solar radiation than the anticyclonic circulation of the Antarctic. Orig. art. has: 11 figures and 13 tables. [04]

ASSOCIATION: Glavnaya geofizicheskaya observatoriya, Leningrad (Main Geophysical Observatory)

SUBMITTED: 00 ENCL: 00 SUB CODE: ES, AA

NO REF SOV: 015 OTHER: 010 ATD PRESS: 4093

Card 2/2

L 1961-66 EWT(1) GW

ACCESSION NR: AT5022061 UR/2531/65/000/179/0028/0040

AUTHOR: Berlyand, T. G.

TITLE: Variability of solar radiation reaching the earth's surface

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 179, 1965. Teplovoy balans (Heat balance), 28-40

TOPIC TAGS: solar radiation, scattered radiation, total radiation, solar height, climatic condition

ABSTRACT: The ratio of maximum to minimum solar radiation for various regions of the earth is determined and represented in a table in the original article. The difference between the diurnal maximum and minimum of total and scattered radiation is greatest in desert and monsoon regions. The relative change in the minimum and maximum of scattered radiation depends upon total radiation. Diurnal changes in scattered radiation are less in equatorial regions. The change in total radiation depends upon the change in direct solar radiation. Variations in monthly values of total and scattered radiation were determined from their deviations from a mean value based on observation data obtained over a ten-year period. Variations in total and scattered radiation increase from winter to summer because of the increased solar

Card 1/2

L 1961-66

ACCESSION NR: AT5022061 3

height at noon and the longer daylight. Monthly variations in total radiation are greater at high and middle latitudes and in regions of unstable weather conditions. Variations in direct, downwelling, solar radiation depend upon climatic conditions and the position of the observer; in polar regions the variations are greater than in the tropics. Orig. art. has: 5 tables, 3 figures, and 2 formulas. [EG]

ASSOCIATION: Glavnaya geofizicheskaya observatoriya, Leningrad (Main Geophysical Observatory) 44,55

SUBMITTED: 00 ENCL: 00 SUB CODE: AA, ES

NO REF SOV: 008 OTHER: 000 ATD PRESS: 4088

Card 2/2

BERLYAND, TS.; KRIVOKHATSKIY, I., redaktor; MOGILETSKIY, B., tekhnicheskiy redaktor

[Odessa; a guidebook and directory] Odessa; spravochnik. [Odessa] Odesskoe obl. izd-vo, 1957. 246 p. (MIRA 10:6)
(Odessa--Directories)